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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,736	11/12/2003	Hugo Cheung	TI-32389.1	8891

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EXAMINER

HUYNH, KIM NGOC

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>10/712,736</p>	<p>Applicant(s)</p> <p>CHEUNG ET AL.</p>	
	<p>Examiner</p> <p>Kim Huynh</p>	<p>Art Unit</p> <p>2182</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 7-12 in paper filed 8/05/04 is acknowledged. The traversal is on the ground(s) that the groups are not both independent and distinct is not found persuasive because:

a. The apparatus claims of group I can be used to practice another and materially different process and the method of group II are not inherent steps of the apparatus claims. The apparatus of group I requires a hardware logic device for controlling the operation of the interface whereas the method relies upon a virtual special function register for performing the data transfer operation; the apparatus does not requires the special register of the method claims. See MPEP 806.05(e).

b. Applicant fails to show that the methods of group II are necessitated only by the apparatus of group I or provides an admission that the claimed inventions are obvious over each other within the meaning of 35 USC 103 (MPEP 803).

c. As for the argument that the claims are not independent and distinct; please note that MPEP 803 states that restriction is proper if the claimed inventions are either independent OR distinct. MPEP 806 (B) states that when the claimed inventions are related but are distinct as claimed, restriction is proper; and MPEP⁸⁰⁶~~806~~.04(b) defines independent inventions as two different subcombinations usable with each other, each may be a species of some common generic invention.

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d. In response to applicant's argument that the examiner failed to provide any indication as to how or why a search of both group would create a burden on the USPTO; MPEP 803 states "For purposes of the initial requirement, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02". Please note the examiner had indicated in the previous office action that these claimed invention acquired a separate status in the art shown by their different classification.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 13-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hill et al (US 4,816,996).

Claim 7, Hill discloses (Fig. 3) an SPI having plurality of hardware pointers (56, 60) to the memory location in a FIFO buffer (RAM 36), one hardware counter 51, and

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hardware logic device (30-34, 40-43, 49, -53) with bus interface 21 to utilize the FIFO buffer for intermediate storage data transmitted from/to CPU (inherent function of SPI, see background).

Claim 8, the queue pointer produces signals SPI transmitter/receiving signal depending on the mode of transmission (col. 5, ll. 18-52).

Claim 9, Hill discloses the SPI having transmitter buffer and receiver buffer (input and output buffers 31-32) configured to receive/transmit data to the FIFO buffer.

Claims 10-11, Hill discloses the SPI module configured to operate as one of master and slave and having data register chip select signal 37 to the bus interface.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as obvious over Hill in view of Sowell et al. (US 5,047,927).

Hill discloses all the limitation of claim 7 above except the use of a DMA with the SPI for providing cycle stealing. Sowell discloses that it is well known to use DMA and its cycle stealing technique to reduce CPU overhead and aide in the transfer of data. It would have been obvious to one having ordinary skill in the art to utilize DMA

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in the system of Hill in order to take advantage of improving data communication and providing efficient means of data movement (Hill, col. 3, ll. 5-10).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

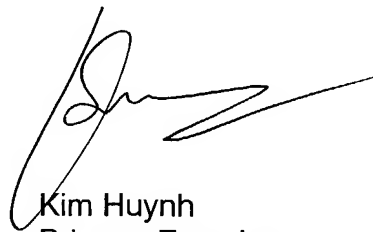
Michael (US 5,199,105), Dobson (US 5,717,8700), Thompson et al. (US 5,278,956), and Lentz (US 5,444,853) disclose various serial peripheral interface devices with improved buffering schemes.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703) 308-1678. The examiner can normally be reached on Mon - Thu, 6:30AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (703) 308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

A handwritten signature in black ink, appearing to read 'Kim Huynh', with a long horizontal stroke extending to the right.

Kim Huynh
Primary Examiner
Art Unit 2182

KH
8/20/04